CLAIMS

1. A strain of a micro-organism characterized in that one or more of its NADPH-oxidizing activities have been limited.

2. A strain according to Claim 1 characterized in that one or more of its NADPH-oxidizing activities have been limited by the deletion of one or more genes coding for a quinone oxidoreductase and/or a soluble transhydrogenase.

3. A strain according to either of Claims 1 and 2 characterized in that it has also undergone modifications that favour one or more of its $NADP^+$-reducing enzyme activities.

4. A strain according to Claim 3 characterized in that it has undergone the deletion of one or more genes coding for a phosphoglucose isomerase and/or a phosphofructokinase.

5. A strain according to any of Claims 1 to 4 characterized in that it has also undergone the modification of one or more genes coding for a dihydrolipoamide dehydrogenase and/or a glyceraldehyde 3-phosphate dehydrogenase so as to cause it to utilize NADP preferentially.

6. A strain according to any of Claims 1 to 5 characterized in that it also overexpresses one or more genes coding for a glucose 6-phosphate dehydrogenase, or a 6-phosphogluconolactonase, or a 6-phosphogluconate dehydrogenase, or an isocitrate dehydrogenase or a membrane-bound transhydrogenase.

7. A strain according to any of Claims 1 to 6 characterized in that it has also undergone the deletion of one or more genes coding for a 6-phosphogluconate dehydratase, or a malate synthase, or an isocitrate lyase or an isocitrate dehydrogenase kinase/phosphatase.

8. A strain according to any of Claims 1 to 7, characterized in that it comprises one or more endogenous or exogenous genes coding for enzymes involved in the biotransformation of a substance of interest.

9. A strain according to any of Claims 1 to 8, characterized in that it comprises one or more selection marker genes.

10. A strain according to any of Claims 1 to 9 characterized in that it is selected among the following: *Aspergillus sp.*, *Bacillus sp.*, *Brevibacterium sp.*, *Clostridium sp.*,

Corynebacterium sp., *Escherichia sp.*, *Gluconobacter sp.*, *Penicillium sp.*, *Pichia sp.*, *Pseudomonas sp.*, *Rhodococcus sp.*, *Saccharomyces sp.*, *Streptomyces sp.*, *Xanthomonas sp.* or *Candida sp.*

11. A method for the preparation of strains optimized according to any of Claims 1 to 10 characterized in that it involves the deletion of one or more genes coding for a quinone oxidoreductase and/or a soluble transhydrogenase, and if required the deletion of one or more genes coding for a phosphoglucose isomerase, or a phosphofructokinase, or a 6-phosphogluconate dehydratase, or a malate synthase, or an isocitrate lyase or an isocitrate dehydrogenase kinase/phosphatase, and/or the modification or one or more genes coding for a dihydrolipoamide dehydrogenase and/or a glyceraldehyde 3-phosphate dehydrogenase, so as to cause it to utilize NADP preferentially, which deletions and modifications are carried out by appropriate means, and/or the overexpression of one or more genes coding for a glucose 6-phosphate dehydrogenase, or a 6-phosphogluconolactonase, or a 6-phosphogluconate dehydrogenase, or an isocitrate dehydrogenase or a membrane transhydrogenase, either by converting the strain by means of an appropriate vector containing one or more genes coding for one or more enzymes involved in the biotransformation of a substance of interest and/or one or more selection marker genes, or by modifying the strength of the endogenous promoter or promoters controlling the gene or genes to be overexpressed.

12. A method for the production of a substance of interest formed by a biosynthesis route of which at least one step is NADPH-dependent characterized in that it comprises the following two steps:

a) Growth in culture of micro-organisms optimized according to any of Claims 1 to 10 in an appropriate culture medium that favours their growth and contains substances necessary for carrying out biotransformations by fermentation or bioconversion, except NADPH.

b) Extraction of the substance of interest from the medium and if necessary its purification.

13. A method according to Claim 12 characterized in that the substance of interest is an amino acid, or a vitamin, or a sterol, or a flavonoid, or a fatty acid, or an organic acid, or a polyol or a hydroxyester.